Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-104. (canceled)

105. (previously presented) A method of producing a preparation of high mannose glucocerebrosidase (hmGCB) comprising a carbohydrate chain having at least four mannose residues, comprising:

providing a mammalian cell that expresses a human glucocerebrosidase (GCB);

contacting the cell with kifunensine;

allowing the cell to produce hmGCB; and

harvesting the hmGCB from the cell or its culture media, to thereby produce an hmGCB preparation.

106. (previously presented) The method of claim 105, wherein removal of one or more α 1,2 mannose residue(s) distal to the pentasaccharide core is prevented.

107-108. (canceled)

109. (previously presented) The method of claim 105, wherein the kifunensine is present at a concentration between about 0.05 to 20.0 μg/ml.

110. (previously presented) The method of claim 109, wherein the kifunensine is present at a concentration between about 0.1 to 2.0 μg/ml

111. (previously presented) The method of claim 105, further comprising contacting the cell with a class 2 processing mannosidase inhibitor.

112. (previously presented) The method of claim 111, wherein the class 2 processing mannosidase inhibitor is selected from the group consisting of: swainsonine, mannostatin, 6-deoxy DIM, 6-deoxy-6-fluoro-DIM and combinations thereof.

113. (previously presented) The method of claim 111, wherein the class 2 processing mannosidase inhibitor is swainsonine.

114. (previously presented) The method of claim 111, wherein the class 2 processing mannosidase inhibitor is present at a concentration between 0.05 to 20.0 μg/ml.

115. (previously presented) The method of claim 105, wherein the hmGCB has at least one carbohydrate chain having five mannose residues.

116. (previously presented) The method of claim 105, wherein the hmGCB has at least one carbohydrate chain having eight mannose residues.

117. (previously presented) The method of claim 105, wherein the hmGCB has at least one carbohydrate chain having nine mannose residues.

118. (previously presented) The method of claim 105, wherein the removal of one or more mannose residues distal to the pentasaccharide core is prevented on at least two carbohydrate chains of hmGCB.

119. (previously presented) The method of claim 105, wherein at least 60% of the hmGCB of the preparation have one or more carbohydrate chains in which the removal of one or more mannose residues distal to the pentasaccharide core has been prevented.

120. (previously presented) The method of claim 119, wherein the removal of three or more mannose residues distal to the pentasaccharide core has been prevented.

121. (previously presented) The method of claim 105, wherein at least about 20% of the hmGCB of the preparation have one or more carbohydrate chains having at least eight mannose residues.

122. (previously presented) The method of claim 121, wherein at least about 40% of the hmGCB of the preparation have one or more carbohydrate chains having at least eight mannose residues.

123. (previously presented) The method of claim 122, wherein at least about 60% of the hmGCB of the preparation have one or more carbohydrate chains having at least eight mannose residues.

124. (previously presented) The method of claim 105, wherein at least about 80% or more of the carbohydrate chains of the hmGCB preparation have six or more mannose residues.

125. (previously presented) The method of claim 105, wherein the cell is a human cell and is a knockout for a class 2 processing mannosidase.

126. (previously presented) The method of claim 105, wherein the cell is a human cell and comprises a class 2 processing mannosidase antisense molecule.

127. (previously presented) The method of claim 105, wherein the cell comprises an exogenous nucleic acid sequence comprising a GCB coding region.

128. (previously presented) The method of claim 127, wherein the cell further comprises an exogenous regulatory sequence which functions to regulate expression of the GCB coding region.

129. (previously presented) The method of claim 105, wherein the cell comprises an exogenous regulatory sequence which functions to regulate expression of an endogenous GCB coding sequence.

130. (previously presented) The method of claim 105, wherein the cell is a primary cell.

131. (previously presented) The method of claim 105, wherein the cell is a secondary cell.

132. (canceled)

133. (previously presented) The method of claim 105, wherein the cell is a human cell.

134. (previously presented) The method of claim 133, wherein the cell is a fibroblast or a myoblast.

135. (previously presented) The method of claim 133, wherein the cell is an immortalized cell.

136. (previously presented) The method of claim 134, wherein the cell is an HT-1080 cell.

137. (previously presented) The method of claim 105, wherein the cell is contacted with kifunensine in culture media.

138. (previously presented) The method of claim 137, wherein the hmGCB is obtained from the media in which the cell is cultured.

139. (previously presented) A method of producing a preparation of high mannose glucocerebrosidase (hmGCB) comprising a carbohydrate chain having at least four mannose residues, the method comprising:

providing a human cell into which a nucleic acid sequence comprising an exogenous regulatory sequence has been introduced such that the regulatory sequence is operably linked to, and regulates the expression of, an endogenous GCB coding region;

contacting the cell with a class 1 mannosidase inhibitor such that the removal of at least one mannose residue distal to the pentasaccharide core of a precursor oligosaccharide of GCB is prevented; and

allowing the cell to produce hmGCB, to thereby produce an hmGCB preparation.

140. (previously presented) The method of claim 139, wherein the mannosidase inhibitor prevents the removal of one or more α 1,2 mannose residue(s) distal to the pentasaccharide core.

141. (currently amended) The method of claim 139, wherein the mannosidase inhibitor further prevents the removal of one α 1,3 mannose residue distal to the pentasaccharide core.

142. (currently amended) The method of claim 139, wherein the mannosidase inhibitor further prevents the removal of one α 1,6 mannose residue distal to the pentasaccharide core.

143. (canceled)

144. (previously presented) The method of claim 139, wherein the class 1 processing mannosidase inhibitor is kifunensine.

145. (previously presented) The method of claim 144, wherein the kifunensine is present at a concentration between about 0.05 to 20.0 μg/ml.

146. (previously presented) The method of claim 145, wherein the kifunensine is present at a concentration between about 0.1 to 2.0 μg/ml.

147. (previously presented) The method of claim 139, wherein the cell is further contacted with a class 2 mannosidase inhibitor.

148. (previously presented) The method of claim 147, wherein the class 2 processing mannosidase inhibitor is selected from the group consisting of: swainsonine, mannostatin, 6-deoxy DIM, 6-deoxy-6-fluoro-DIM and combinations thereof.

149. (previously presented) The method of claim 147, wherein the class 2 processing mannosidase inhibitor is swainsonine.

150. (previously presented) The method of claim 147, wherein the class 2 processing mannosidase inhibitor is present at a concentration between 0.05 to 20.0 μg/ml.

151. (previously presented) The method of claim 139, wherein the cell is a knockout for a class 2 processing mannosidase.

152. (previously presented) The method of claim 139, wherein the cell comprises a class 2 processing mannosidase antisense molecule.

153. (previously presented) The method of claim 139, wherein the hmGCB has at least one carbohydrate chain having six mannose residues of the precursor oligosaccharide.

154. (previously presented) The method of claim 139, wherein the hmGCB has at least one carbohydrate chain having eight mannose residues of the precursor oligosaccharide.

155. (previously presented) The method of claim 139, wherein the hmGCB has at least one carbohydrate chain having nine mannose residues of the precursor oligosaccharide.

156. (previously presented) The method of claim 139, wherein the mannosidase inhibitor prevents removal of at least three mannose residues distal to the pentasaccharide core of the precursor oligosaccharide of GCB.

157. (previously presented) The method of claim 139, wherein the mannosidase inhibitor prevents removal of one or more mannose residues distal to the pentasaccharide core on at least two of the carbohydrate chains of hmGCB.

158. (previously presented) The method of claim 139, wherein at least 60% of the hmGCB of the preparation have one or more carbohydrate chains in which the removal of three or more mannose residues distal to the pentasaccharide core has been prevented.

159. (previously presented) The method of claim 139, wherein at least 20% of the hmGCB of the preparation have one or more carbohydrate chains having at least eight mannose residues.

160. (previously presented) The method of claim 159, wherein at least 40% of the hmGCB of the preparation have one or more carbohydrate chains having at least eight mannose residues.

161. (previously presented) The method of claim 160, wherein at least 60% of the hmGCB of the preparation have one or more carbohydrate chains having at least eight mannose residues.

162. (previously presented) The method of claim 139, wherein at least about 80% or more of the carbohydrate chains of the hmGCB preparation have six or more mannose residues.

163. (previously presented) The method of claim 139, wherein the cell is a primary cell.

164. (previously presented) The method of claim 139, wherein the cell is a secondary cell.

165-166. (canceled)

167. (currently amended) The method of claim 139 [[166]], wherein the cell is a fibroblast or a myoblast.

168. (currently amended) The method of claim 139 [[166]], wherein the cell is an immortalized cell.

169. (previously presented) The method of claim 168, wherein the cell is an HT-1080 cell.

170. (previously presented) The method of claim 144, wherein the cell is contacted with kifunensine in culture media.

171. (previously presented) The method of claim 170, wherein the hmGCB is obtained from the media in which the cell is cultured.

172-183. (canceled)

184. (previously presented) The method of claim 105, wherein the cell is a Chinese hamster ovary (CHO) cell transfected with an exogenous nucleic acid sequence comprising a human GCB coding sequence.

185. (previously presented) The method of claim 105, wherein the cell is a COS cell transfected with an exogenous nucleic acid sequence comprising a human GCB coding sequence.